

```
Hydrophilic
         Hydrophobic
               -2
                                       0
                                                   1
 1
    -1.08
                          ======= M
 2
   -1.28
                       ======== S
 3
   -1.74
    -1.85
 5
    -2.11
 6
    -1.61
 7
    -1.50
                     ======== L
8
   -1.50
                     ======== L
9
    -1.28
                         ======= L
10
   -0.98
11
    -0.38
                                 ==== S
12
     0.07
                                       A =
13
     0.18
                                       L ==
14
     0.48
                                       A ====
15
     0.50
16
     0.53
17
     0.42
18
     0.42
19
     0.43
                                       G
20
     0.47
                                       \mathbf{T}
21
     0.23
22
     0.25
                                       Α
23
     0.38
                                       \mathbf{E}
24
    0.38
                                       S
25
    -0.08
                                      N
26
   -0.08
                                      L
27
    -0.20
                                      S
28
   -0.20
                                   == S
29
    -0.20
                                   == K
30
    -0.67
                              ===== F
31
     0.25
                                       Q
32
     0.72
                                       F
                                         ======
33
     1.17
                                         ========
34
     1.15
35
     1.10
                                       N
36
     0.82
37
     0.35
                                       Ε
38
     0.35
                                       Q
39
     0.32
                                       N ===
40
     0.32
41
     0.63
42
     1.38
43
     1.85
                                         44
     1.05
                                         =========
     0.75
45
                                       Q
                                         ======= 、
46
     0.15
```

Fig. 1A

```
47
    -0.42
                               ==== E
   -0.87
                          ======= R
48
49
   -1.43
                     ========= I
50
   -1.10
                        ======= I
    -0.80
51
                           ====== t
52
   -0.18
                                 == V
53
   -0.23
                                 == S
54
   -0.37
                               ==== T
55
   -0.25
                                ===N
56
    -0.28
                                === G
57
    0.22
                                    S ==
58
    -0.25
                                === I
   0.05
59
                                    Η
60
   0.05
                                    S
61
   -0.07
                                  = P
62
    -0.05
                                    R
    -0.55
63
                             ===== F
64
    0.37
                                    P ====
65
    0.40
                                    H ====
66
    0.42
                                    T ====
67
     0.23
68
   -0.08
                                    Ρ
    -0.33
69
                                ===R
    -1.40
70
                     ======== N
   -0.93
71
                          ======= T
72
    -1.17
73
    -1.17
                       ======= L
74
    -0.95
                         ======= V
75
    -0.95
                         ======= W
76
    0.12
                                    R =
77
    0.12
                                    L
                                      =
78
    0.45
                                    V
                                      =====
79
    0.45
80
   -0.03
                                    V
    -0.08
81
                                  = E
    -0.55
82
                             ===== E
83
    -1.35
                     ========= N
    -1.45
84
                     ======== V
85
    -1.62
                   ========= W
86
    -0.55
                             ===== I
     0.25
87
                                    Q ===
88
     0.72
                                    L ======
89
     0.60
                                    T =====
90
     0.67
                                    F ======
91
     0.78
92
     0.78
93
     0.78
                                    R ======
94
     0.28
                                    F ===
95
     1.20
                                    G ========
96
     1.70
```

Fig. 1B

```
97
     2.50
                                   98
     1.70
                                   D ==========
                                   P =======
99
     1.03
100
     1.53
                                   E =========
101
     0.65
                                   D ======
102
     0.65
                                   D =====
103
    -0.27
                                === I
104
   -0.22
                                 == C
105
    0.45
                                   K =====
106
    -0.30
                                === Y
107
     0.58
                                   D =====
     0.58
108
                                   F =====
109
     1.00
                                   V =======
110
     1.30
                                   E ========
     1.30
                                   V =========
111
112
     1.55
                                   E =========
     0.98
113
                                   E =======
114
     0.18
                                   P ==
                                 = S
115
    -0.12
                                 == D
116
    -0.17
117
    -0.17
                                 == G
118
    -0.73
                            ====== T
119
    -0.83
                           ====== I
    -0.53
120
                              ==== L
121
    -0.80
                           ====== G
    -0.80
122
                           ====== R
    -1.37
123
                     ======== W
124
    -1.05
                        ======== C
125
    -0.88
                          ====== G
    -0.88
126
                          ======= s
    0.18
127
                                   G ==
128
    0.22
                                   T -==
129
                                   V
   -0.02
130
    0.28
                                    P ===
131
     0.78
                                   G ======
132
     0.78
                                   K ======
133
     0.32
                                    Q
     0.32
134
                                   I ===
135
    0.32
                                    S ===
     0.77
136
                                   K ======
137
    -0.03
                                   G
138
    0.47
                                   N =====
139
     0.02
                                   Q
140
    -0.27
                                === I
141
    0.08
                                   R =
142
    0.08
                                    I =
143
     0.88
                                   R =======
144
     0.00
                                   F
145
     0.00
                                    V
146
     0.25
                                    S ===
```

Fig. 1C

```
147
     0.25
                                     D ===
148
     0.25
                                     E ===
149
    -0.25
                                 ===Y
150
     0.13
                                     F
151
     0.13
                                     Ρ
152
    -0.03
                                     S
153
    -0.38
                                ==== E
154
                          ======= P
     -0.97
155
     -1.35
                      ======= G
156
     -1.32
                       ======= F
157
     -1.20
                        ======= C
158
    -1.28
                       ======== I
159
    -1.20
                        ======= H
160
     -1.12
                         ======= Y
161
    -0.70
                            ====== N
162
     -1.15
                        ======== I
    -0.92
163
164
    -0.17
                                  == M
165
    -0.03
                                     P
166
    -0.28
                                 === Q
167
     -0.27
                                 === F
168
     0.15
                                     T =
     0.27
169
                                     Ε
                                       ===
170
     -0.48
                               ==== A
171
     -0.70
                             ===== V
172
    -0.45
                               ==== S
173
     -0.50
                               ==== P
174
     -0.45
    -0.58
175
176
    -0.63
                              ===== L
177
    -0.33
                                 ===P
178
     -0.63
                              ===== P
179
     -0.13
                                   = S
                               ==== A
180
     -0.48
     -0.70
181
                             ====== L
     -0.37
182
                                ==== P
     -0.33
183
                                 === L
184
     -0.12
     -0.92
185
186
     -1.18
187
     -0.97
                          ======= N
    -1.42
188
189
    -2.02
                ========== A
190
     -2.00
                191
     -2.00
192
     -0.93
                           ====== A
193
     -0.35
                                ==== F
     -0.23
194
                                  == s
195
      0.03
                                     Т
196
      0.60
                                     L =====
```

Fig. 1D

```
197
     0.52
                                    E ====
                                 === D
    -0.28
198
199
    -0.28
                                 === L
     0.02
200
                                     Ι
     0.82
                                    R ======
201
                                     Y ======
202
     0.82
203
     1.03
                                    L =======
204
    1.37
                                    E =========
                                     P =====
205
     0.57
206
     1.07
                                     E ========
207
     0.27
                                     R ===
     0.27
208
                                     w ===
209
     0.93
                                     Q ======
210
     0.60
                                     L =====
211
     0.52
                                     D =====
212
     0.52
                                     L =====
213
     0.82
                                     E ======
     0.25
214
                                    D ===
    -0.42
215
                                ==== L
216
    -0.08
                                   = Y
217
     0.00
                                    R
218
    -0.80
                            ====== P
219
     -0.80
                            ====== T
    -0.23
220
                                  == w
221
    -0.15
                                  = Q
    -0.60
222
                              ===== L
223
    -0.55
                             ===== L
224
    -0.67
                             ===== G
225
    -0.67
                             ===== K
    -0.67
                             ====== A
226
    -0.08
227
                                   = F
    0.38
228
                                     V ====
229
    1.13
                                     F ========
230
    1.30
                                     G ========
231
     1.05
                                     R ========
232
    1.05
                                     K ========
     0.25
233
                                     S ===
234
    0.23
                                     R ==
235
    -0.57
                              ===== V
236
    -0.62
                              ===== V
237
    -0.43
                               ==== D
    -0.43
238
                                ==== L
239
     0.37
                                     N ====
    0.08
240
                                     L =
241
    0.88
                                     L =======
242
    0.88
                                     T =======
243
    0.57
                                     E =====
244
    0.12
                                     E =
245
    -0.55
                              ===== V
246
    -0.37
                                ==== R
```

Fig. 1E

```
247
    -0.87
                           ======= L
    -0.07
248
                                   = Y
249
     0.35
                                     S ====
250
    -0.12
                                   = C
     0.10
                                     \mathbf{T}
251
                                     Ρ
252
    -0.08
253
    -0.03
                                     R
254
    -0.83
                            ====== N
255
    -0.37
                                ==== F
256
      0.55
                                     S =====
257
     1.00
                                     V =======
258
      0.95
                                       ========
259
      1.40
                                     I
                                       260
     2.20
                                     R ==============
     1.63
261
     1.63
262
                                     E ==========
     1.07
263
                                     L =======
264
     1.07
                                     K ========
265
    0.15
                                     R =
                           ====== T
266
    -0.92
267
    -0.85
                           ====== D
268
    -1.35
                      ======== T
269
    -1.45
                     ======== I
    -1.45
270
                      ======= F
    -1.33
271
                       ======== W
272
    -1.02
                          ======= P
273
    -0.52
                               ==== G
274
    -0.02
                                     C
275
    -0.02
                                     L
276
     0.28
                                     L ===
277
     0.58
                                     V =====
278
    0.87
                                     K =======
279
    0.20
                                     R ==
280
    -0.38
                                ==== C
281
    -0.38
                                ==== G
    -0.55
282
                              ===== G
    -0.85
283
                           ======= N
284
    -0.97
                          ======= C
    -0.77
285
                            ====== A
    -0.85
286
                           ======= C
287
    -0.65
                             ===== C
288
     0.02
                                     \mathbf{L}
     0.15
289
                                     H ==
290
    0.27
                                     N ===
291
     0.07
                                     C =
292
    -0.02
                                     Ν
293
    -0.05
                                     E
294
    -0.50
                               ===== C
295
    0.17
                                     Q ==
296
    -0.12
                                   = C
```

Fig. 1F

7/12 297 -0.02 V 298 0.73 P ====== 299 1.23 S ======== 300 1.20 K ======== 301 0.62 1.37 302 T ========= 303 1.18 K ======== 304 0.38 K ==== 305 -0.08 = y -0.40 306 ==== H 307 0.18 E ==-0.32 308 === V 309 0.43 L ==== 310 0.67 0 ====== 311 0.63 L ===== 312 0.68 R ===== 313 0.68 P ====== 314 0.68 K ====== 315 -0.12 = T= G 316 -0.13 317 0.37 V ==== 318 0.67 R ====== -0.13 319 = G 320 -0.20 == L 321 0.60 H ===== 0.43 322 K ==== 323 -0.15= S324 -0.50===== L 325 0.30 T ===326 0.28 D === 327 0.10 V =328 0.85 A ======= 329 1.43 L ========= 1.57 330 E ========= 331 1.57 H ========= 332 1.48 h ========= 333 0.92 E ======= 334 0.25 E === 335 0.36 C ==== 336 0.64 D ===== 337 0.30 C === 0.51 338 V ===== 339 0.87 C ======= 1.15 340 R ======== 341 0.00 G 342 0.00 S 343 0.00 Т 344 0.00 G 345 0.00 G -**2** -1 Hydrophilic Hydrophobic

Fig. 1G